

Higher Education: CIOs Are Driving Transformation to Accelerate Value



By Tony Pagliarulo, Ken LeBlanc and Barbara DeLoureiro

The Higher Education business model – in fact the entire Higher Education ecosystem – has undergone significant change in the last ten years with no signs of slowing down. Technology is the engine driving that change and Provosts, Administrators, Faculty and students all expect their IT shops to keep up, or better yet, stay ahead. Technology enables the attraction and retention of students, the research process and the distance learning revenue stream. It also pervades the classroom teaching experience with digital whiteboards and adaptive learning techniques creating a unique experience for students. Technology – mobile and social platforms in particular drives how students engage with the college and other students.

Radical innovations in technology coupled with the increased expectations of educators, students, and knowledge workers in today’s age of instant gratification have amplified the importance of IT to transform and respond to these new drivers: consumerization, hyper-convergence, social, “mobile everything”, cloud and analytics. This phenomenon and the mandate to deliver competitive advantage through the digitization of core processes is having a direct impact on how Higher Education IT organizations operate and deliver services. Higher Education IT organizations of all sizes are facing a monumental set of challenges and increased pressure to introduce differentiated capabilities, while they also continue to deliver reliable core services with reduced budgets.

Unfortunately, many Higher Education CIOs find themselves strapped with complex legacy systems, few mobile capabilities, minimal digitization, and a proliferation of manual processes acting as hurdles to delivering capabilities. Their IT shops have a dedicated staff, however they frequently lack the right skill sets and in some cases the right “change behavior” to adopt and adapt to new technologies and ways of working. Feudal behaviors between IT and the department functions fuel the friction between the administration, academia, and IT on how best to leverage and invest in technology resulting in an ever expanding portfolio of departmental built, bought or outsourced applications or “shadow IT”. One CIO commented that they are ineffective “fly swatters” when it came to controlling shadow IT.

The most effective Higher Education CIOs know how best to focus their resources on top priorities, proactively take pragmatic steps to provide value added services, and collaborate effectively with their peers if they expect to be successful.

CIO Sensei, a leading boutique IT Advisory firm, conducted a series of interviews, polling CIOs and IT Executives from a range of institutions from small private colleges to large public universities and completed external research to get a sense of the common challenges, strategies and practices IT leaders are employing to measure effectiveness and deliver services. The research identified a common set of challenges, goals and objectives and leading practices applied by high performing Higher Education IT organizations.

Higher Education IT Challenges

Interviews, client case experience and external research identified the following common Higher Education IT challenges:

<p>Legacy Infrastructure: Maintaining legacy applications & infrastructure, managing complexity and delivering highly reliable foundational services. Explosive data growth, sprawl and lack of integration are an increasing problem.</p>	<p>Value Creation: Ensuring alignment with the changing goals and objectives of the institution, faculty and staff while introducing transformative capabilities to digitize operations and accelerate educational and administrative outcomes.</p>	<p>Workforce Enablement: Attracting, developing, and retaining a workforce possessing the skills required today and for the future.</p>	<p>Engagement: Developing a strong, trusted partnership with the institution’s departments, faculty, and academic leaders.</p>
---	--	--	---

When speaking to Higher Education CIO’s about their top priorities and challenges a number of consistent themes emerge. Maintaining a complex portfolio of **Legacy Systems while trying to introduce new capabilities** is top of mind for most CIOs. They plague every IT shop, but successful CIOs have taken steps to modernize legacy systems and use them as a foundation to deliver new capabilities. In addition, the explosive growth of data and burgeoning departmental “shadow IT” systems are introducing significant integration and data integrity problems and an inability to deliver advanced analytics.

Second, CIOs need to ensure that they have a **Strategy, which is aligned with the objectives of the institution, and demonstrate Value Creation**. CIOs need to provide “value” back to the institution and demonstrate the benefits of their IT investment. They still need to efficiently “keep the lights on” and provide core services ensuring people get paid, classrooms are adequately equipped, faculty and administration have reliable email services, and tuition fees are collected. However, as academic technology takes center stage in providing new opportunities in how professors teach and how students learn, the importance of the user “experience” and providing a platform to seamlessly access and share information becomes even more critical.

CIOs continue to struggle with **Workforce Enablement** and are very concerned with attracting, retaining and developing the talent within their organizations. They often have an aging workforce that is still needed to support 20th century legacy systems, yet different skills are required to deliver new technologies. In addition, excellent communication skills, process expertise and the ability to lead change are now required competencies for IT employees.

Finally, the Higher Education operating model has significantly changed, forcing IT leaders to establish strong partnerships and **Engagement** with their internal stakeholders and constituents. Successful CIOs proactively

reach out and build strong relationships with the Provost, academic and the administrative departments. This dynamic poses both new personal challenges and organizational opportunities.

How CIO's Can Add Value

So what should Higher Education CIO's do to stay relevant and continue to add value? This paper shares leading practices implemented by some of the most successful CIOs, highlights areas where they continue to struggle, and how they can get or stay ahead of the pack in a leadership position.

By focusing on four foundational pillars and core capabilities, CIOs can successfully respond to these expanding expectations and fundamentally transform their IT organization into a progressive enabler of the institution's strategy:

1. **Effectiveness:** Effective IT organizations measure themselves based on how they deliver services, provide support to their user community and deliver projects. They are recognized for continuously inspecting their operation for opportunities to drive out waste, eliminate or optimize non-value processes, and automate repeatable activities to improve quality and speed.
2. **Operating Model:** A scalable IT Operating Model consists of Governance, Organization, Practices and Processes, and Performance Management. When properly aligned with an institution's strategy and mission, the IT Operating Model can ensure the school's desired outcomes are realized. Proactive and dynamic engagement with internal & external customers is key to building collaborative partnerships.
3. **Technology Portfolio Simplification:** Legacy systems and their associated *technical debt* continue to distract IT organizations and their ability to keep pace with new demands and expectations. Minimizing the limitations of existing systems combined with a pragmatic move to a modernized architecture is key to developing new capabilities. Introducing data governance and improving data quality is often a pre-requisite to improved analytics and integration.
4. **Efficiency:** Running IT "as a business", leading CIO's have a solid grasp of their organization's financial performance and have proven practices in place to ensure rigor is applied to managing their budget. Managing the entire IT budget (labor, vendors, maintenance, capital) is no longer the "finance" organization's responsibility, and is foundational to a CIO being able to make investment decisions that best align with the institution's objectives.

1. Effectiveness:

Senior administrators and institution leaders expect 100% uptime and reliability of e-mail and network services, and demand access to their data and content in any form factor through a seamless user experience. The consumerization of IT has changed the expectations of knowledge workers, staff and students forever – users now expect a “one click” experience and ubiquitous access to information on the device of their choice. The successful CIOs interviewed are taking steps to measure their effectiveness in new ways. Understanding the user experience and “customer” sentiment is key to really gauging the effectiveness of an IT organization. Those CIOs that measure their success and impact by uptime and help desk ticket closures alone are creating a false sense of success.

Several of the leading CIOs interviewed are gauging value by taking a “Total Customer Experience” approach, where their customer is the faculty, student, and administrative department knowledge workers. For these user groups they are tracking the user experience for core processes by capturing real time feedback from students as they registered for classes, and also measuring the efficiency of these processes to provide a much better basis for capturing the effectiveness of IT capabilities being delivered. Another mechanism to capture user sentiment is through surveys with simple, consistent questions administered in regular intervals so that improvements can be tracked over time.

Another CIO takes a full lifecycle view, working with the Admissions department to capture the listings of prospective students and maintaining long-term historical data. By tracking prospective students as they progress from student to graduate to alumnus, and ultimately their contributions to the school’s endowment, they can determine the “Total Customer Value”. This life cycle approach is helping to track student’s interaction throughout their matriculation and beyond, proactively identifying issues, when and where students might be having difficulty with grades or payments and providing resources to students and parents to help keep students in class and eventually graduate. As the pressure mounts to measure Higher Education on tuition ROI, it is becoming even more important to provide tools and resources to help students graduate in 4 years, find meaningful employment or advance to graduate school.

Establishing a strong Project Management framework and methodology was another way to increase the effectiveness of some Higher Education IT organizations. Leveraging a consistent Project Management framework that consists of a clear scope statement, schedule, budget, and risk assessment and is adaptable to various delivery methods (waterfall, agile, etc.), drives rigor, improves transparency, predictability, and outcome realization.

One successful CIO at an elite Liberal Arts College has established a strong Program Management office, which has been adopted across the institution for non-IT projects as well. Another new CIO inherited a backlog of over 200 items that various stakeholders had requested of IT. By implementing a governing body of institution leaders and a project management framework, they were able to prioritize the demand and set realistic expectations for delivery along a mutually agreed upon timeline. In these ways, IT organizations build credibility and trust with their institutional stakeholders, which is the basis for the partnership needed for success.

Consistent communication and engagement with key department stakeholders is also critical to successful project delivery. CIO's that market their programs and "sell" the benefits to users can create excitement and an improved brand. For example, one CIO promoted the positive features of cloud based e-mail and storage – ubiquitous access, improved user interface and enhanced user experience, to drive support for his change effort.

The following leading practices were identified:

- Implement a "Total Customer Value" ecosystem by measuring and communicating user sentiment and satisfaction scores. Capture this data real time to proactively address issues.
- Focus on improved user experience and increased self-service
- Establish a strong Project Management framework and methodology
- Proactively engage university stakeholders in IT governance, including demand prioritization, staff allocation, data quality, and roadmaps.
- Provide timely, clear communications in a format targeted for specific audience consumption that uses commonly known terms and avoids techno jargon.

2. Operating Model:

Leading CIOs have developed an IT strategy in conjunction with organization leaders that is strongly linked to and enables the achievement of the institution's goals. A sound strategy is also adaptable to an ever-changing academic and technology landscape to be relevant. One CIO took the opportunity of the appointment of a new University President to build a partnership and create an IT strategy that was integrated into the strategic planning process.

A CIO's success – organizationally and personally – is strongly tied to the relationships they have established across the institution and externally to other institutions and technology partners. Funding, departmental involvement in projects, CIO participation at C-level forums, and technology costs are all influenced by the relationship with IT and in most cases, the CIO directly. Leading CIOs in our study revealed they spend upwards to 50% of their time nurturing relationships with the Provost, Academia, and Administrators as well as actively participating in Higher Education forums. As institutional consolidations, sister college partnerships, and cooperative collaborations continue to grow, so too will the CIO's relationship building skills need to be perfected. The most successful CIOs and their top performing IT employees are constantly honing inter-personal relationship building, communication and soft skills.

An aging workforce and their organization's ability to adapt to constant change was a concern raised by every CIO. Changing the attitudes of staff that were long tenured or just wanted to be "in by 9:00 and out by 5:00" frustrated one CIO. To curb this behavior, one CIO has mobilized a highly visible "change positive" program where staff are incented to proactively introduce change. All agree that the pace of change is accelerating, demanding an evolving set of high priority skills and an organization that can adapt quickly. Attracting and

retaining staff with the right skill sets is challenging while also retaining the tribal knowledge of staff approaching retirement. While there are no quick fixes or easy answers, successful CIOs are making organization development and workforce planning a top priority.

One CIO is experimenting with temporarily rotating IT staff into the university administrative departments to improve their functional skills and increase their empathy for their customers. Another CIO identified high performers that were supporting technology that was being phased out and provided options to the employees to get trained by attending industry conferences in new technologies that were needed. This approach retained critical tribal knowledge, and also set an example for the IT team that the university was willing to invest in their employees if they were willing to adapt to the evolving technology landscape. Obviously the harder scenario is providing alternate career options for those that are not open to learning new skills. That is why fostering an environment where the organization is open to change remains a high priority and a concern of most CIOs.

The following leading practices were identified:

- Collaboratively develop IT strategy with Senior Administration and departments in support of the institution's strategy and objectives.
- Foster strong relationships with key constituents across and external to the institution.
- Institute a forward-looking "Workforce of the Future" Human Capital Management plan accounting for retirement, legacy system support, and required new skill sets.
- Diversify the collective experience of the organization with a mix of Higher Education and Corporate IT experience to build a culture that is adaptable to change.
- Rotate IT staff into other departments on temporary basis and seek external training opportunities to improve skills and technology coverage.

3. Technology Portfolio Simplification:

Maintaining a complex legacy environment consumes a large portion of resources and can present a barrier to introducing new innovations. Custom code, antiquated technologies inflexible to change, and limited in-house and vendor support are just a few of the many challenges legacy systems present. Frequently implemented by a predecessor, they often have a negative perception throughout the institution and are nearly always included in CIO answers to the "what keeps you up at night?" question.

Enterprise resource planning (ERP) systems and other core applications are often the engine that enables core processes for the college. They may not be pretty or have slick, eloquent user-friendly interfaces, but they enable critical processes and operations. There is a silver lining that legacy systems hold that leading CIOs recognize – the data needed to supply many of the newer, modern applications are housed in those complex legacy systems. If successfully harnessed, ERP data can enable new technology implementations including analytics and mobile applications. Successful CIOs look at their ERP systems in terms of how they enable the

school's strategic direction and desired business outcomes. Student retention analytics originate in the ERP and the same is true for faculty and alumni data, budget and forecasting data and so on. The leading CIOs have unlocked the power of these legacy systems by building robust integration and analytics platforms to federate and share this information in consumer-friendly dashboards.

Leading CIOs also position these systems on technology replacement roadmaps, albeit perhaps long-range ones. Having a solid stabilization plan, coupled with an application modernization plan, can help to mitigate those sleepless nights.

In conjunction with developing or updating the IT strategy, portfolio rationalization – application and tools – is a key activity. A number of CIOs have initiated rationalization initiatives with varying success. For application rationalization, plotting applications on a simple two-by-two matrix was an effective way to determine application value and highlight redundancy in function. More than one CIO was using guidance from Gartner and plotting applications on “Degree of Differentiation against Business Outcomes Value” as well as other matrices, tools and techniques. Similar approaches were taken for infrastructure tool rationalization.

Complex infrastructure, networking and aging data centers was also a common problem identified by interview respondents. Adoption of Cloud technology and services has lagged in higher education institutions, however, that paradigm is changing rapidly and leading Higher Education CIOs are aggressively moving e-mail, storage and applications to the cloud. Several CIOs have, or are in the process of, shutting down on-campus data centers and getting out of the infrastructure business. Instead, they are focused on investing in expanding wireless access and improving end-user services.

The following leading practices were identified:

- Introduce an application and infrastructure portfolio rationalization plan and position systems on technology replacement roadmaps.
- Explicitly include Social, Mobile, Cloud, Information, and Security & emerging technologies within the Enterprise Architecture roadmap.
- Take a “Today’s implementation is tomorrow’s legacy” approach to development and support.
- Promote Innovation by being an active Beta site for key technology partners.

4. Efficiency:

Delivering value back to the university is job one, however understanding the detailed costs required to deliver IT services is foundational to that goal. In terms of measuring hard dollar savings and benefits, leading CIOs implement a strong financial discipline where each investment is strongly aligned to the overall strategy and success is measured quantitatively. Developing business cases and an understanding of how the investment fits in IT, academic, and administrative roadmaps is a necessity. One CIO established an interactive governance framework with administration and faculty resulting in a shift in spend and capacity to decrease the “run”

investment and increase the “grow and transform” investments. Many of the CIOs interviewed report to the CFO, where financial discipline is mandated. Sharing IT costs in a consumable and transparent fashion is critical to making investment decisions and allocating resources. Few CIOs had moved to a full charge-back model, but many have begun the journey by moving to “showing- back” costs by service.

Value identification is also often an art in that it is determined by “the eyes of the beholder” – the eyes in this case, being those of the students, faculty, and administrators. Leading CIOs are using “a day in the life” approach to providing value. Looking at how students interact with technology throughout their typical day highlights the need for mobile apps and opportunities where IT can provide immediate value.

The pressure to contain or reduce operating costs and demonstrates ROI on tuition education dollars introduces a new opportunity for CIOs to demonstrate value through the introduction of tools and technology. Automation of former manual processes such as application tracking and introducing self-service capabilities to support the student lifecycle, i.e. introducing mobile apps for students to register for classes and select housing, is becoming more common.

The following leading practices were identified:

- Run “IT as a business”, guided by a clearly defined financial metrics framework.
- Create “cost per service” model and regularly benchmarking against peers.
- Adopt a “Customer” centric approach: Use “Day in the Life” requirements method for student, faculty, administrators.
- Establish a strong vendor management function, including guidelines for build/buy/subscribe and on/off premise decisions.
- Quantify and measure the value of IT investments and be pragmatic in this approach.
- Strike the right balance between transform and run/keep-the-lights-on projects and investments.

Benchmarking with Maturity Frameworks

CIOs can improve their organizational capabilities and value contributions to the institution by implementing some of the proven leading practices used by successful CIOs. That being said, getting a solid understanding of the current state of your operation and how IT is perceived at your institution is a critical first step. How do your customers really feel about the services and capabilities you provide? Are you delivering new innovations to “move the needle” and be perceived as a value driver. What is the “brand” of your IT organization?

One tool that IT Leaders can use to get a baseline of their current state and benchmark their effectiveness is the Higher Education IT Maturity Framework. Maturity Frameworks are a common method to complete both quick and high level benchmarks and can also serve as a starting point for a detailed assessment of the

organization. Using a Maturity Framework, one can assess where you are, determine an appropriate level to attain, and the pragmatic steps to take within realistic time frames to achieve those levels.

Based upon this study, CIO Sensei developed the following Higher Education IT Maturity Framework.

Higher Education IT Maturity Framework

Capability Area	Laggard	Mediocre	Striver	Leader
1. Effectiveness		◐		
2. Operating Model	○			
3. Technology Portfolio Simplification				●
4. Efficiency			◑	



Table 1

For each of the four capability areas, a series of leading practices were identified which IT organizations are scored against to determine where they fall on the maturity scale. This benchmark study is included in IT assessment and diagnostic offerings provided by CIO Sensei.

The Good News

Our interviews and discussions with institution Presidents, Provosts and Senior Administrators confirmed that technology is a critical component to their success and that they are dependent on their IT organization to meet their strategic goals and objectives. College leadership is willing to invest in technology, so the time is ripe for CIOs to seize this opportunity.

The best CIOs know their operation, where they need to bring their organization, themselves and how to take pragmatic steps to reach their goals. Transforming IT in Higher Education is non-negotiable for institutions to continue to meet their goals and objectives and adapt to this dynamic environment. Successful Higher Education CIOs are partnering with the President and Senior Leaders of the institution to transform the way IT works and are an integral part of their institution’s success.

About CIO Sensei, LLC

CIO Sensei is an IT advisory firm comprised of former CIOs, IT Practitioners, and Business Executives with “real world” experience successfully leading organizations and delivering business results. Our experienced team combines strategic thinking with a pragmatic approach to accelerate value realization for our clients. Please visit us at: www.ciosensei.com

For more information on how CIO Sensei can help make an immediate impact transforming your organization, contact us at: info@ciosensei.com.

References:

- *Top 10 IT Issues, 2016, Divest, Reinvest, and Differentiate.* EDUCAUSEreview, 2016.
- *“The NMC Horizon Report: 2016 Higher Education Edition”* New Media Consortium and EDUCAUSE, 2016.
- *“6 Tech Trends on Course to Reshape Higher Ed by 2020”*, EdTech Magazine, March 2015.
- *“The Future Model of Higher Education IT”*, Center for Digital Education, 2013.
- *“NextGen Michigan”*, University of Michigan, <http://nextgen.umich.edu/>
- Interviews with Higher Education CIOs, Client Case Studies and participation in various industry forums from April – July 2016.